the Economics of Potato and Vegetable Production in Alberta — 1981 —

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The Economics of Potato And Vegetable Production in Alberta 1981

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SECTION I

INTRODUCTION

Potato and vegetable production in Alberta has fluctuated considerably during the last several years. Total area under cultivation for fresh and processing vegetables decreased from 10,295 acres in 1975 to 8,295 acres in 1981, a decrease of about 19.5 per cent. The most significant reduction in area was for processing vegetables which decreased from 8,735 acres in 1975 to 6,055 acres in 1981. However, the area under fresh vegetables increased from 1,560 acres in 1975 to 2,240 acres in 1981. This increase was not enough to offset the drop in acreage for processing vegetables. During the last 10 years the potato acreage in Alberta decreased sharply from 23,000 in 1972 to 16,600 acres in 1981, a decrease of about 28 per cent.

For the 1981 crop year, the total acreage under potatoes, and fresh and processing vegetables was distributed as follows: potatoes 67 per cent, fresh vegetables 9 per cent, and processing vegetables 24 per cent. Despite the decline in acreage for potatoes and vegetables, overall production of these crops increased to 210 037 tonnes in 1981 from 195 173 tonnes in 1975. This increase, however, has not kept pace with the growing demand for these products. As a result more emphasis has been placed on increasing imports of fresh and processed produce from the U.S.A., Mexico and other Canadian provinces (B.C. and Ontario) to meet the growing demand.

There is a consensus within the industry that Alberta has the potential for greatly expanding production of local vegetables thereby reducing imports significantly. In keeping with these concerns, representatives of the vegetable and potato industry requested that the Production Economics Branch undertake a study to document production costs and returns for fresh and processing vegetables, and potatoes. It is felt that production cost and return data would assist in establishing prices for potatoes, and fresh and processing vegetables, and that such information would also assist producers in marketing their produce.

This report is based on the 1981 data (third year of study) obtained from potato and vegetable producers through a survey questionnaire. The report provides information on production costs and returns for potatoes, and fresh and processing vegetables. Fresh vegetables included in the analysis are cabbage, carrots, corn and turnips. Processing vegetables included in this analysis are beans, corn and peas. Economic data on potato production are provided for fresh market potatoes and seed potatoes.

Objectives of the Study

The major objective of this study is to provide the Alberta vegetable and potato industry, extension personnel, interest groups, and the general public with factual cost of production information on potatoes, and fresh and processing vegetables. Specifically, the objectives of this study are:

1. To determine production costs and returns for potatoes and vegetable crops;
2. To compare production costs and returns of fresh and processing vegetables; and
3. To prepare a report on the findings for the use of producers and agribusiness.

Data Collection

For the 1981 crop year, data on production costs and returns were collected from fifty-three (53) potato, and fresh and processing vegetable producers through a personal questionnaire survey. Forty-nine (49) of the study participants were from southern Alberta and four from north-central Alberta.

Following is the breakdown of the enterprises studied over the last three years:

Crop	Number of Enterprises Studied		
	1979	1980	1981
Cabbage	7	3	3
Carrots (fresh)	4	3	3
Corn (fresh)	4	4	4
Turnips	2	3	4
Potatoes	23	5	9
Seed Potatoes	-	4	3
Processing beans	4	3	8
Processing corn	5	4	12
Processing peas	15	8	15
Market gardening	9	-	-
TOTAL	73	37	61

Method of Analysis

The Computer Services Branch of Alberta Agriculture assisted in developing a computer program for data analysis. Data for this study were analyzed using the farm business enterprise analysis program.

Computation of Costs and Returns

Data provided in this report for each crop are based on the number of acres studied. Costs and returns on a per acre basis for each category were calculated by dividing the sum of all expenses or income by the number of acres in that group. Thus, costs and returns were weighted on a per unit of production basis rather than calculated using the simple average approach. In some cases, certain costs were not incurred, therefore costs per unit for different inputs were averaged to determine the average costs per acre or per unit of production.

Labour Costs: Hired labour payments as reported in the year-end statement were apportioned for various enterprises on the farm by the study participant. Operator's labour was valued at $7.00 per hour, an amount comparable to that required to hire a skilled farm worker. Labour provided by the operator's wife and children was accounted for and valued according to the jobs performed.

Input Costs: Most of the inputs used in potato and vegetable production are bought during the production year and recorded as such in the year end statement. However, an attempt was made to record the inventory of inputs like fertilizers, seed and chemicals, since these inputs might have been purchased the previous year for use in the production year under study. Efforts were made to accurately monitor all input costs used in the production of crop under study regardless of the date of purchase.

Machine Costs: Machine operating costs included repairs, fuel, lubrication and insurance expenses. Machine operating costs were divided into various categories to allow for allocation to a specific enterprise. The categories were farm power machinery, general crop machinery, specialty crop machinery, and miscellaneous equipment.

Miscellaneous Costs: These costs included property tax, water tax, crop insurance, cash rent, or crop share, building repairs, equipment repairs, and utilities, etc. These costs were apportioned to each enterprise by the study participant.

Investment Costs: An opportunity cost was calculated on the equity portion of land, building, and machinery investment. The study participants were asked to put a market value on all investment items and also provide the amount of debt - long term, intermediate and short term loans. With the above information available, equity position was established and a long term rate of return was applied to arrive at an opportunity cost on the operator's investment.

Suggested rates of return on equity by the study participants ranged from 7 per cent to 12 per cent. However, this study used 10 per cent as the rate of return on equity.

The study participants were asked to establish a depreciation rate for each category of investment so that an allowance could be made for depreciation. Depreciation costs for machinery and improvements are listed under the operating costs of the enterprise expenditure statement.

Income: Returns for each enterprise generally represented the figures recorded for income tax purposes. However, the total value of the crop grown during the study year had to be estimated since normally the crop harvested is not completely sold until sometime during the next calender year. Therefore, income is comprised of crop value and crop insurance receipts, if any.

SECTION II

POTATO AND VEGETABLE PRODUCTION IN ALBERTA

Production of potatoes and vegetables in Alberta has varied considerably during the last 10 years. Combined area under potatoes, fresh and processing vegetables was 28,678 acres in 1972 which declined to 25,698 acres in 1975 and to the lowest level in 1980 at 25,100 acres. In 1981, area under these crops increased to 25,837 acres. Most significant increases in acreage were for processing peas and potatoes.

Acreage and Production of Fresh Vegetables in Alberta

Table 1 provides details on the area and production of six major fresh vegetables grown in Alberta. Area under fresh vegetables was at the lowest level in 1975 at 1,560 acres but con-tinued to increase in the following years. The area under these crops increased to 2,240 acres in 1981 whereas production increased from 12,071 tonnes in 1975 to 16,165 tonnes in 1981. While the acreage of fresh vegetables increased by more than 44 per cent from 1975 to 1981, overall production of these crops in terms of tonnage increased by only 34 per cent during the same period.

Acreage and Production of Processing Vegetables in Alberta

Table 2 provides information on processing vegetables which shows that area and production of these crops has fluctuated greatly. Acreage of processing vegetables ranged from a low of 4,540 acres in 1978 to a high of 8,735 acres in 1975. Over the last

TABLE 1: ACREAGE AND PRODUCTION OF MAJOR FRESH VEGETABLES IN ALBERTA, 1975-1981

CROP	1975		1976		1977		1978		1979		1980		1981	
	Acres	Tonnes	Acres	Tonnes	Acres	Tonnes	Acres	Tonnes	Acres	Tonnes	Acres	Tonnes	Acres	Tonnes
Cabbage	210	2 756	260	2 273	260	2 585	300	2 779	350	3 232	380	4 309	450	4 491
Carrots	390	4 603	310	4 335	370	5 096	370	4 843	270	4 491	420	5 806	500	4 899
Corn, Fresh	650	2 040	650	1 445	610	1 575	600	1 590	650	1 865	760	1 595	760	2 025
Cucumbers	100	351	130	337	130	189	130	255	140	261	150	286	150	295
Onions	50	272	170	1 696	120	1 676	120	1 235	50	463	200	1 687	220	2 232
Turnips	160	2 049	150	1 876	150	2 279	150	2 324	160	2 145	160	2 395	160	2 223
TOTAL	1,560	12 071	1,670	11 962	1,640	13 400	1,670	13 026	1,720	12 457	2,070	16 078	2,240	16 165

Source: Statistics Canada, Fruit and Vegetable Production, Catalogue 22-003, Statistics Canada, Ottawa, 1975-1981.

TABLE 2

ACREAGE AND PRODUCTION OF PROCESSING VEGETABLES IN ALBERTA, 1975-1981

CROP	1975		1976		1977		1978		1979		1980		1981	
	Acres	Tonnes	Acres	Tonnes	Acres	Tonnes	Acres	Tonnes	Acres	Tonnes	Acres	Tonnes	Acres	Tonnes
Beans	593	1 346	569	1 085	673	1 772	478	998	578	1 142	582	1 406	480	1 418
Beets	50	826	30	501	80	1 308	78	1 282	N/A	N/A	78	1 281	36	600
Carrots	132	2 875	65	1 405	76	1 629	14	273	104	2 948	126	2 948	18	514
Corn	2,650	12 745	2,634	13 154	2,000	9 316	1,163	6 172	1,919	10 520	1,030	10 692	2,040	12 273
Peas	5,310	11 089	4,136	7 135	3,700	8 634	2,807	4 582	4,516	7 043	3,853	6 795	3,481	6 638
TOTAL	8,735	28 881	7,434	23 280	6,479	22 659	4,540	13 307	7,117	21 653	6,669	23 122	6,055	21 443

Source: Alberta Processing Vegetable Marketing Board, Annual Reports.

four years the area under processing vegetables increased significantly, but has not reached the acreage of the 1975 crop year level. Production of the five major processing vegetables has not kept pace with the demand for these crops, hence emphasis has been placed on increasing imports. Details on area and production of processing vegetables in Alberta are given in Table 2 for the years 1975 to 1982.

Acreage and Production of Potatoes in Alberta

Although acreage of potatoes has declined by about 39 per cent from 1972 to 1981, i.e., a decrease from 23,000 acres in 1972 to 16,600 acres in 1981, production of potatoes has increased by a little over 3 per cent during this period. The increase in potato tonnage can be attributed to higher yields and improved management practices. Information on area under potatoes, yield per acre, total potato production in tonnes, and farm value of potatoes per tonne is given in Table 3 for the years 1972 to 1981.

TABLE 3: ACREAGE AND PRODUCTION OF POTATOES IN ALBERTA, 1972-1981

Year	Acres	Tonnes/Acre	Total Production Tonnes	Farm Value $/Tonnes
1972	23,000	8.09	185 972	49.94
1973	23,000	8.89	204 350	94.80
1974	23,000	7.89	181 473	59.56
1975	18,000	8.57	154 221	84.08
1976	16,200	10.08	163 293	71.73
1977	17,000	9.87	167 829	74.64
1978	16,000	9.34	149 432	78.27
1979	17,000	10.21	173 499	75.91
1980	16,000	11.61	185 791	85.26
1981	16,600	10.39	172 429	92.25

SECTION III

PRODUCTION COSTS AND RETURNS

This section of the report provides detailed information on the average production costs and returns for potato and vegetable enterprises analyzed for the 1981 crop year. An attempt would also be made to provide comparable information for the various crops studied and analyzed during the previous two crop years, i.e., 1979 and 1980.

The following were the major fresh and processing vegetables for which detailed information on production costs and returns were obtained through personal survey:

i) Fresh Vegetables:
   - Cabbage
   - Carrots
   - Corn, and
   - Turnips

ii) Processing Vegetables:
   - Beans
   - Corn, and
   - Peas

In addition to the above crops, data on production costs and returns were obtained for potatoes and seed potatoes.

Production costs and returns data for potatoes, various fresh and processing vegetables are given in Tables 4 to 12 and for the convenience of the study participants and users of the report, data have been presented in the following five parts:

PART I: This part provides information on income or receipts for different crops. Area per farm is simply the average number of acres of the crop grown by the study participants in that particular group. Yield per acre is the weighted average of saleable production (per acre) for the acres under study. Total receipts per acre consist of an estimated crop value for the particular crop under study and miscellaneous receipts such as insurance, stabilization payments, value of aftermath, and patronage payments, etc. Receipts shown in the tables are based on per acre and per unit of crop production (tonnes) for easy comparison.

PART II: Presents information on operating costs which include all out-of-pocket costs (cash costs) plus an allowance for building and machinery depreciation. Because of the producers' interest in knowing their operating costs for each basic unit of production, these costs were broken into as much detail as possible. The most significant inputs which make up major portions of the operating costs are fertilizer, chemicals, seed, power machinery fuel and repairs, utilities and hired labour. Details on these input costs and other components of operating costs are given in Part II of the Tables for each enterprise studied during the 1981 crop year.

PART III: This part shows the total production costs on a per acre and per unit of production basis. Total production costs consist of operating costs, opportunity cost on the equity portion of investment, interest paid on long term debt, and payment for operator and family labour.

PART IV: Management factors show return over operating costs and are usually referred to when choosing among cropping alternatives. Return over operating costs is the

difference between total receipts per acre and the total operating costs per acre. Return to management - the second item under the "Management Factors" is based on the difference between the total receipts and total production costs. Labour used represents the number of labour hours required for a particular enterprise.

PART V: Lists major investment items and estimates of investment for each item required for a particular enterprise. The estimated cost of the total investment is very useful for management purposes. The four categories of investment presented at the bottom of each table are power machinery, other machinery, buildings and improvements, and land.

Costs and Returns For Fresh Vegetables

Cabbage For Fresh Market:

Area under cabbage has increased considerably during the last 7 years, i.e. from 210 acres in 1975 to 450 acres in 1981. Similarly production of cabbage for fresh market purposes has increased from 2 756 tonnes in 1975 to 4 491 tonnes in 1981.

For the 1981 study, three (3) growers provided information on cabbage production costs and returns. Average acreage per study participant was 21.5 in 1981 compared to 36 acres in 1980. Average cabbage yield was 9.07 tonnes per acre with returns estimated at $251.82 per tonne or $2,283.37 per acre. Receipts for cabbage in 1981 were lower by about $20 per tonne compared to receipts in 1980. Average receipts per tonne and per acre are given in Part I of Table 4.

Cabbage production is very labour and machinery intensive as can be noted from the operating costs (Part II) presented in Table 4. Hired labour amounted to $556.59 per acre or $61.37 per tonne or about 32 per cent of the total operating costs. Machinery operating costs for cabbage production were $225.69 per acre or 13 percent of the operating costs. Other operating costs, which included freight,

TABLE 4: COSTS AND RETURNS FOR CABBAGE PRODUCTION

		GROUP AVERAGE (3 REPORTS)	YOUR FARM
PART I - INCOME			
Acreage Per Farm		21.50	
Yield Per Acre (tonnes)		9.07	
Crop Value		$2,283.97	
Crop Insurance Receipts			
Miscellaneous Receipts			
TOTAL RECEIPTS/ACRE	$252.82/t	$2,283.97	
PART II - OPERATING COSTS	------	DOLLARS PER ACRE	------
Fertilizer		50.12	
Chemicals		21.19	
Seed Purchased		40.00	
Home Grown Seed		2.33	
Custom Work Hired			
Crop and Hail Insurance			
Cash Rent and Crop Share		82.28	
Power Machinery - Fuel		65.44	
Power Machinery - Repairs		59.26	
General Machinery - Repairs		66.29	
Special Machinery - Repairs		34.70	
Miscellaneous Equipment			
Building Repairs			
Operating Capital Interest Pd.		29.63	
Utilities		48.91	
Other Insurance		19.69	
Property Taxes		3.78	
Accounting and Legal		5.81	
Other		487.32	
Hired Labour		556.59	
Tools Purchased			
Depreciation - Improvements		42.42	
Depreciation - Machinery		142.65	
TOTAL OPERATING COSTS	193.88/t	1,758.42	
PART III - PRODUCTION COSTS			
Operating Costs		1,758.42	
Int. On Equity - Owned Land		13.95	
Int. On Equity - Improvements		91.41	
Int. On Equity - Machinery		52.31	
Int. On Equity - Supplies			
Interest On Long Term Debt		23.26	
Operator's Labour		272.79	
Family Labour		110.53	
TOTAL PRODUCTION COSTS	256.09/t	2,322.67	
PART IV - MANAGEMENT FACTORS			
Return Over Operating Costs	57.95/t	525.55	
Return to Management	-4.27/t	-38.70	
Labour Used (Hours)		216.85	
PART V - INVESTMENT ITEMS			
Supply Inventory		106.08	
Power Machinery		475.13	
Other Machinery		547.13	
Buildings and Improvements		960.93	
Land		1,209.30	
TOTAL INVESTMENT		3,298.57	

sacks/bags, tags, brokerage fee and association dues amounted to $487.32 per acre or $53.73 per tonne of cabbage sold. Input costs averaged to $111.31 per acre. Because of the high use of farm machinery in cabbage production, the machinery depreciation estimate for the 1981 crop year amounted to $142.65 per acre. The total operating costs for cabbage production (Part II of Table 4) were $2,758.42 per acre or $193.88 per tonne in 1981. Share of these costs was about 76 per cent of the total production costs in 1981.

Other costs (Part III of Table 4) which included equity in land, improvements, machinery and supplies, interest on long-term debt, operator and family labour were $564.25 per acre or $62.21 per tonne. Total production costs based on operating costs and other costs were estimated to be $2,322.67 per acre or $256.09 per tonne during the 1981 cabbage production year.

Return over operating costs was positive by $525.55 per acre or $57.95 per tonne. Return to management which is based on gross income less total production costs was negative by $38.70 per acre ($4.27/tonne) as shown in Part IV of Table 4.

Average investment is given in Part V of Table 4. Average value of land as provided by the cabbage growers amounted to little over $1,200 per acre for 1981 or 36.7 per cent of the total investment. Power machinery and other general machinery accounted for 31 per cent of the investment $1,022.62 per acre. Buildings and improvement investment was $960.93 per acre or about 29 per cent of the total investment.

Carrots For Fresh Market:

The area under carrots has increased significantly during the last three years, i.e. from 370 acres in 1979 to 500 acres in 1981, an average increase of about 12 per cent per year. Average yield per acre was 16.11 tonnes with an estimated selling price of $106.71 per tonne. Total receipts were $1,719 per acre in 1981 which showed an increase of 62 per cent over 1980. Details on acreage per farm, yield per acre, crop value and total receipts per acre are presented in Part I of Table 5.

Operating costs for carrot production amounted to $1,365.14 per acre or $84.73 per tonne. The most significant cost items comprising operating costs were other costs, (freight and bagging expenses) at $249.31 per acre, followed by hired labour at $187.46 per acre, cash rent at $103.43 per acre and seed costs at $86.15 per acre. Interest charges on operating capital amounted to $84.59 per acre of carrot production. Machinery operating costs and machinery depreciation costs accounted for 26 per cent of the operating costs or $349.20 per acre. Part II of Table 5 provides in detail the operating costs components.

In addition to the operating costs, interest on the equity portion of investment amounted to $126.32 per acre. Interest paid on long term debt was significantly high at $171.86 per acre primarily because of loans taken at high interest rate to buy farm machinery and equipment. Operator labour was valued at $83.72 per acre. Altogether labour costs (hired and operator labour) amounted to $271.18 per acre or 16 per cent of the total production costs. Details on other costs are presented in Part III of Table 5.

Returns from carrot production averaged $1,719.16 per acre or $106.71 per tonne. Return over operating costs was $21.97 per tonne or $354.02 per acre. Return to Management was negative by about $28.00 per acre or $1.73 per tonne. Total labour requirements for an average carrot grower were 29.21 hours per acre.

Average investment data for carrot production in 1981 based on market value is given in Table 5, Part IV. Investment in machinery, buildings and land were $1,304.45, $2,571.88 and $1,350 per acre, respectively.

TABLE 5: COSTS AND RETURNS FOR CARROT PRODUCTION

		GROUP AVERAGE (3 REPORTS)	YOUR FARM
PART I - INCOME			
Acreage Per Farm		60	
Yield Per Acre (tonnes)		16.11	
Crop Value		$1,719.16	
Crop Insurance Receipts			
Miscellaneous Receipts			
TOTAL RECEIPTS/ACRE	$106.71/t	$1,719.16	
PART II - OPERATING COSTS	- - - - -	DOLLARS PER ACRE	- - - - -
Fertilizer		48.74	
Chemicals		59.96	
Seed Purchased		86.15	
Home Grown Seed			
Custom Work Hired		22.62	
Crop and Hail Insurance			
Cash Rent and Crop Share		103.43	
Power Machinery - Fuel		46.52	
Power Machinery - Repairs		32.45	
General Machinery - Repairs		36.33	
Special Machinery - Repairs		57.27	
Miscellaneous Equipment			
Building Repairs			
Operating Capital Interest Pd.		84.59	
Utilities		37.44	
Other Insurance		7.81	
Property Taxes		2.27	
Accounting and Legal		7.08	
Other		249.31	
Hired Labour		187.46	
Tools Purchased			
Depreciation - Improvements		119.08	
Depreciation - Machinery		176.63	
TOTAL OPERATING COSTS	84.73/t	1,365.14	
PART III - PRODUCTION COSTS			
Operating Costs		1,365.14	
Int. On Equity - Owned Land			
Int. On Equity - Improvements		79.41	
Int. On Equity - Machinery		46.91	
Int. On Equity - Supplies			
Interest On Long Term Debt		171.86	
Operator's Labour		83.72	
Family Labour			
TOTAL PRODUCTION COSTS	108.44/t	1,747.03	
PART IV - MANAGEMENT FACTORS			
Return Over Operating Costs	21.97/t	354.02	
Return to Management	-1.73/t	-27.88	
Labour Used (Hours)		29.21	
PART V - INVESTMENT ITEMS			
Supply Inventory		52.39	
Power Machinery		430.11	
Other Machinery		874.34	
Buildings and Improvements		2,571.88	
Land		1,350.00	
TOTAL INVESTMENT		5,278.71	

Corn For Fresh Market:

The area under corn for fresh market has fluctuated between 600 and 760 acres during the last 7-8 years. Acreage under corn did not show any increase in 1981 over 1980. Average yield reported by the study participants was 4.2 tonnes per acre with a selling price of $180.39 per tonne. Gross income for fresh corn was estimated at $757.70 per acre in 1981. Part I in Table 6 provides details of yield and income data.

Average operating costs in 1981 for fresh corn production amounted to $607.64 per acre or $144.66 per tonne. Machinery operating costs (fuel and repairs) and depreciation accounted for 28 per cent of the total operating costs at $164.91 per acre. Material costs (fertilizer, chemicals and seed) and hired labour were also significant at $95.53 and $78.09 per acre, respectively. Cash rent crop share was valued at $80.40 per acre or 14 per cent of the operating costs. Details on other components of operating costs are shown in Part II of Table 6.

Other production costs (Part III, Table 6) i.e. interest on equity amounted to $52.33 per acre, interest on long term debt was $22.61 per acre and operator and family labour was valued at $56.48 per acre. Total production costs i.e., operating costs and other costs amounted to $739.06 per acre or $175.95 per tonne. Return over operating costs and to management was positive by $150.06 per acre ($35.72/t) and $18.63 per acre ($4.44 per tonne), respectively. Labour required to produce one acre of corn was estimated at 21.1 hours.

Details on management factors on investment items are presented in Table 6.

TABLE 6: COSTS AND RETURNS FOR CORN PRODUCTION

		GROUP AVERAGE (4 REPORTS)	YOUR FARM
PART I - INCOME			
Acreage Per Farm		57.50	
Yield Per Acre (tonnes)		4.20	
Crop Value		$757.70	
Miscellaneous Receipts			
TOTAL RECEIPTS/ACRE	$180.39/t	$757.70	
PART II - OPERATING COSTS	- - - - -	DOLLARS PER ACRE	- - - - -
Fertilizer		49.97	
Chemicals		21.30	
Seed Purchased		24.26	
Home Grown Seed			
Custom Work Hired		67.39	
Crop and Hail Insurance			
Cash Rent and Crop Share		80.40	
Power Machinery - Fuel		40.94	
Power Machinery - Repairs		29.22	
General Machinery - Repairs		31.61	
Special Machinery - Repairs		9.26	
Miscellaneous Equipment			
Building Repairs		0.22	
Operating Capital Interest Pd.		14.88	
Utilities		11.07	
Other Insurance		4.87	
Property Taxes		5.78	
Accounting and Legal		1.63	
Other		75.30	
Hired Labour		78.09	
Tools Purchased			
Depreciation - Improvements		7.58	
Depreciation - Machinery		53.88	
TOTAL OPERATING COSTS	144.66/t	607.64	
PART III - PRODUCTION COSTS			
Operating Costs		607.64	
Int. On Equity - Owned Land		14.22	
Int. On Equity - Improvements		5.21	
Int. On Equity - Machinery		32.90	
Int. On Equity - Supplies			
Interest On Long Term Debt		22.61	
Operator's Labour		49.96	
Family Labour		6.52	
TOTAL PRODUCTION COSTS	175.95/t	739.06	
PART IV - MANAGEMENT FACTORS			
Return Over Operating Costs	35.72/t	150.06	
Return to Management	4.44/t	18.63	
Labour Used (Hours)	5.02/t	21.10	
PART V - INVESTMENT ITEMS			
Supply Inventory		31.23	
Power Machinery		183.75	
Other Machinery		344.52	
Buildings and Improvements		52.22	
Land		1,410.87	
TOTAL INVESTMENT		2,022.59	

Turnips:

Acreage under turnips in Alberta has fluctuated between 150 and 160 acres during the last several years. Average yield reported by the study participants was 14.21 tonnes per acre which was considerably higher over the previous year. Total receipts for one acre of turnips amounted to $4,176.71 or $293.84 per tonne. Table 7, Part I provides details on average yield and returns.

Turnip production is labour and machinery intensive, therefore, these costs were significantly higher when compared to other items in operating costs. Hired labour costs were $548.26 per acre or 28 per cent of the total operating costs. Machinery operating costs (fuel, repairs and depreciation) amounted to $514.50 per acre or about 27 per cent of the operating costs. Other operating costs (freight and baggage) were estimated to be $476.30 per acre or 25 per cent of the operating costs. Total operating costs as shown in Table 7, Part II amounted to $1,953.36 per acre or $137.12 per tonne.

Interest on the equity portion of investment was $328.72 per acre and actual interest paid on debt averaged at $4.29 per acre. Family and operator labour costs were estimated at $864.22 per acre or 28 per cent of the total production costs. The average production cost of turnips in 1981 was $2,616.01 per acre or $221.65 per tonne.

Returns from turnip production in 1981 averaged $4,176.71 per acre or $293.84 per tonne. Turnip growers on the study therefore received a return over operating costs of $2,223.36 per acre ($156.42 per tonne) and a return to management of $1,026.13 per acre ($72.19 per tonne). The study participants estimated the labour requirements at 296.34 hours per acre.

Average investment data are presented in Part V of Table 7. Machinery investment averaged $1,849.90 per acre and thus accounted for 42 per cent of the total investment. Building improvement and land investment averaged $1,472.86 and $1,071.43 per acre, respectively.

TABLE 7: COSTS AND RETURNS FOR TURNIP PRODUCTION

		GROUP AVERAGE (4 REPORTS)	YOUR FARM
PART I - INCOME			
Acreage Per Farm		17.50	
Yield Per Acre (tonnes)		14.21	
Crop Value		$4,137.86	
Crop Insurance Receipts			
Miscellaneous Receipts		$38.86	
TOTAL RECEIPTS/ACRE	$293.84/t	$4,176.71	
PART II - OPERATING COSTS	- - - - -	DOLLARS PER ACRE	- - - - -
Fertilizer		52.13	
Chemicals		37.07	
Seed Purchased		9.67	
Home Grown Seed			
Custom Work Hired			
Crop and Hail Insurance			
Cash Rent and Crop Share		31.57	
Power Machinery - Fuel		123.50	
Power Machinery - Repairs		114.67	
General Machinery - Repairs		50.60	
Special Machinery - Repairs		27.86	
Miscellaneous Equipment			
Building Repairs		61.43	
Operating Capital Interest Pd.		41.84	
Utilities		50.76	
Other Insurance		31.97	
Property Taxes		7.57	
Accounting and Legal			
Other		476.30	
Hired Labour		548.26	
Tools Purchased		14.01	
Depreciation - Improvements		76.27	
Depreciation - Machinery		197.87	
TOTAL OPERATING COSTS	137.42/t	1,953.36	
PART III - PRODUCTION COSTS			
Operating Costs		1,953.36	
Int. On Equity - Owned Land		57.14	
Int. On Equity - Improvements		131.79	
Int. On Equity - Machinery		139.79	
Int. On Equity - Supplies			
Interest On Long Term Debt		4.29	
Operator's Labour		462.79	
Family Labour		401.43	
TOTAL PRODUCTION COSTS	221.65/t	3,150.58	
PART IV - MANAGEMENT FACTORS			
Return Over Operating Costs	156.42/t	2,223.36	
Return to Management	72.19/t	1,026.13	
Labour Used (Hours)	20.85	296.34	
PART V - INVESTMENT ITEMS			
Supply Inventory		50.00	
Power Machinery		724.61	
Other Machinery		1,125.29	
Buildings and Improvements		1,472.86	
Land		1,071.43	
TOTAL INVESTMENT		4,444.18	

Costs and Returns for Processing Vegetables

Beans:

Acreage under processing beans has been fluctuating during the last six or seven years between 351 to 482 acres. Eight (8) processing bean growers from southern Alberta provided cost and return data for the 1981 crop year. These growers represented about 55 per cent of bean acreage in Alberta in 1981. Average yield reported by the study participants was 2.78 tonnes per acre. Total receipts per acre amounted to $796.54 per acre or $286.22 per tonne. Details on average area per farm, yield, and receipts are presented in Table 8, Part I.

Average operating costs as shown in Table 8, Part II for bean production, amounted to $546.24 per acre or $196.28 per tonne. Major components of the operating costs were material costs at $211.45 per acre or 39 per cent of the total operating costs, custom work hired at $136.49 per acre, and machinery fuel, repairs and depreciation at $138.59 per acre.

Other production costs for processing beans are given in Table 8, Part III. These costs include interest on equity (land, improvement and machinery) at $163.53 per acre, interest on long term debt at $38.93 per acre operator's and family labour at $42.44 per acre. Total production cost (operating plus other costs) for processing beans amounted to $791.13 per acre or $284.28 per tonne in 1981. Return over operating costs was $250.30 per acre ($89.94/tonne) and return to management was at $5.40 per acre ($1.94/tonne). Average labour requirement was estimated at 8.32 hours per acre.

Average investment data for processing beans are presented in Table 8, Part V. Land accounted for 68 per cent of the total investment at $1585.59 per acre. Machinery and building improvement amounted to $664.98 and $40.80 per acre, respectively.

TABLE 8 COSTS AND RETURNS FOR BEANS PRODUCTION

		GROUP AVERAGE (8 REPORTS)	YOUR FARM
PART I - INCOME			
Acreage Per Farm		24.29	
Yield Per Acre (tonnes)		2.78	
Crop Value		$771.65	
Crop Insurance Receipts		$24.88	
Miscellaneous Receipts			
TOTAL RECEIPTS/ACRE	$286.22/t	$796.54	
PART II - OPERATING COSTS	- - - - - - - DOLLARS PER ACRE - - - - - - -		
Fertilizer		38.64	
Chemicals		11.85	
Seed Purchased		80.48	
Home Grown Seed			
Custom Work Hired		136.49	
Crop and Hail Insurance		14.45	
Cash Rent and Crop Share		10.68	
Power Machinery - Fuel		32.84	
Power Machinery - Repairs		19.26	
General Machinery - Repairs		22.46	
Special Machinery - Repairs		6.00	
Miscellaneous Equipment		0.29	
Building Repairs		4.88	
Operating Capital Interest Pd.		0.47	
Utilities		2.43	
Other Insurance		1.68	
Property Taxes		10.29	
Accounting and Legal		1.39	
Other		67.74	
Hired Labour		18.75	
Tools Purchased		1.23	
Depreciation - Improvements		6.18	
Depreciation - Machinery		57.74	
TOTAL OPERATING COSTS	196.28/t	546.24	
PART III - PRODUCTION COSTS			
Operating Costs		546.24	
Int. on Equity - Owned Land		114.60	
Int. on Equity - Improvements		3.21	
Int. on Equity - Machinery		45.72	
Int. on Equity - Supplies			
Interest on Long Term Debt		38.93	
Operator's Labour		36.26	
Family Labour		6.18	
TOTAL PRODUCTION COSTS	284.28/t	791.13	
PART IV - MANAGEMENT FACTORS			
Return Over Operating Costs	89.94/t	250.30	
Return to Management	1.94/t	5.40	
Labour Used (Hours)	2.99/t	8.32	
PART V - INVESTMENT ITEMS			
Supply Inventory		25.61	
Power Machinery		427.77	
Other Machinery		237.21	
Buildings and Improvements		40.80	
Land		1585.59	
TOTAL INVESTMENT		2316.98	

Corn:

Area under processing corn in southern Alberta has fluctuated between 1,163 to 2,650 acres during the last seven years. Processing corn is grown under contract with the canneries in southern Alberta. Twelve (12) processing corn growers provided detailed information on costs and returns for the 1981 crop year. Average area per farm under processing corn was about 62 acres with an average yield of 5.68 tonnes per acre. Estimated total receipts for processing corn amounted to $458.29 per acre or $80.62 per tonne.

Average operating costs for processing corn production are presented in Table 9, Part II. Material costs which include fertilizer, chemicals and seed accounted for 29 per cent of the total operating costs at $93.27 per acre. Charges for custom work which are mostly paid to the cannery, amounted to $81.67 per acre or about 25 per cent of the total operating costs. Machinery fuel and repair costs together with depreciation were 26 per cent of the total operating costs at $84.95 per acre.

Total production costs for processing corn were estimated at $570.79 per acre or $100.41 per tonne (Table 9, Part III). Operating costs accounted for 58 per cent of the total production costs at $329.17 per acre and remainder being the other costs. These costs on the equity portion of investment averaged $159.18 per acre for the twelve study participants. Interest paid on long term debt was $40.35 per acre. Operator's labour was valued at $23.12 per acre for processing corn production.

Average return over operating costs for processing corn production was positive by $129.11 per acre or $22.71 per tonne. Average return to management (total receipts - total production costs) was negative by about $112 per acre or $19.79 per tonne (Table 9, Part IV).

Information on average investment for land, buildings and machinery for processing corn production in 1981 is presented in Part V of Table 9. Investment in land was estimated at $1,887.62 per acre or 83 per cent of the total investment. Average machinery and building improvement investment for processing corn was $374.63 per acre and $9.42 per acre, respectively.

TABLE 9 COSTS AND RETURNS FOR PROCESSING CORN PRODUCTION

		GROUP AVERAGE (12 REPORTS)	YOUR FARM
PART I - INCOME			
Acreage Per Farm		61.92	
Yield Per Acre (tonnes)		5.68	
Crop Value		$420.49	
Crop Insurance Receipts		$37.69	
Miscellaneous Receipts		$0.12	
TOTAL RECEIPTS/ACRE	$80.62/t	$458.29	
PART II - OPERATING COSTS	- - - - - - DOLLARS PER ACRE - - - - - -		
Fertilizer		52.91	
Chemicals		18.86	
Seed Purchased		21.90	
Home Grown Seed			
Custom Work Hired		81.67	
Crop and Hail Insurance		15.17	
Cash Rent and Crop Share		9.94	
Power Machinery - Fuel		24.69	
Power Machinery - Repairs		17.02	
General Machinery - Repairs		10.20	
Special Machinery - Repairs		0.24	
Miscellaneous Equipment		0.32	
Building Repairs			
Operating Capital Interest Pd.		5.32	
Utilities		0.91	
Other Insurance		0.51	
Property Taxes		10.80	
Accounting and Legal		1.25	
Other		8.36	
Hired Labour		10.98	
Tools Purchased		1.10	
Depreciation - Improvements		4.23	
Depreciation - Machinery		32.80	
TOTAL OPERATING COSTS	57.91/t	329.17	
PART III - PRODUCTION COSTS			
Operating Costs		329.17	
Int. on Equity - Owned Land		129.77	
Int. on Equity - Improvements		0.72	
Int. on Equity - Machinery		28.69	
Int. on Euqity - Supplies			
Interest on Long Term Debt		40.35	
Operator's Labour		18.97	
Family Labour		23.12	
TOTAL PRODUCTION COSTS	100.41/t	570.79	
PART IV - MANAGEMENT FACTORS			
Return Over Operating Costs	22.71/t	129.11	
Return To Management	-19.79/t	-112.50	
Labour Used (Hours)	1.82	4.69	
PART V - INVESTMENT ITEMS			
Supply Inventory		25.03	
Power Machinery		207.74	
Other Machinery		166.89	
Buildings and Improvements		9.42	
Land		1887.62	
TOTAL INVESTMENT		2296.70	

Peas:

Processing peas are the most widely grown vegetable crop in southern Alberta. The area under processing peas is significantly higher than the combined area of all other processing vegetables. During the last 8 years, the area under peas has fluctuated considerably, e.g., in 1975 it was 5,310 acres which decreased during the next three years to 2,807 acres in 1978 but again increased to 4,516 acres in 1979 (Table 2). In 1981, the area under peas was 3,481 acres a decrease from 3,853 acres in 1980.

Fifteen processing pea growers participated in the 1981 study and provided detailed information on costs and returns for their operations. These growers represented about 22 per cent of the acreage under peas in 1981. Average yield reported by the study participants was 2.02 tonnes per acre in 1981 with an estimated income of $615.90 per acre or $305.09 per tonne (Table 10).

Data on operating costs for production of peas are presented in Part II of Table 10, which amounted to $480.75 per acre or $238.14 per tonne. Fertilizer, chemicals and seed accounted for 32 per cent of the operating costs at $154.12 per acre. Other significant components of the operating costs were custom work, (payable to the cannery) machinery fuel and repairs, harvesting of the crop and association dues (shown as other costs at $65.78 per acre).

Opportunity costs on the equity portion of investment are presented in Part III of Table 10. Interest on equity for land and machinery was estimated to be $115.97 and $75.75 per acre, respectively. Interest paid on long term debt amounted to $24.94 per acre. Operator and family labour were valued at $23.41 per acre. Total production cost for peas amounted to $722.77 per acre or $358.03 per tonne.

Return over operating costs was positive by $135.16 per acre or $66.95 per tonne, (Part IV of Table 10). However, return to management was negative by $106.87 per acre or $52.94 per tonne.

Details on 1981 investment per acre of peas are shown in Table 10 of Part V. Average land investment for the study participants in this group was $2,035 per acre which accounted for about 80 per cent of the total investment for pea production.

TABLE 10 COSTS AND RETURNS FOR PEAS PRODUCTION

		GROUP AVERAGE (15 REPORTS)	YOUR FARM
PART I - INCOME			
Acreage Per Farm		51.37	
Yield Per Acre (tonnes)		2.02	
Crop Value		$586.03	
Crop Insurance Receipts		$29.87	
Miscellaneous Receipts			
TOTAL RECEIPTS/ACRE	$305.09/t	$615.90	
PART II - OPERATING COSTS	- - - - - - - DOLLARS PER ACRE - - - - - - -		
Fertilizer		45.43	
Chemicals		14.03	
Seed Purchased		94.66	
Home Grown Seed			
Custom Work Hired		79.38	
Crop and Hail Insurance		8.90	
Cash Rent and Crop Share		22.81	
Power Machinery - Fuel		27.25	
Power Machinery - Repairs		25.18	
General Machinery - Repairs		16.70	
Special Machinery - Repairs			
Miscellanous Equipment		0.10	
Building Repairs		0.39	
Operating Capital Interest Pd.		12.64	
Utilities		1.71	
Other Insurance		0.51	
Property Taxes		8.74	
Accounting and Legal		1.68	
Other		65.78	
Hired Labour		7.35	
Tools Purchased		1.11	
Depreciation - Improvements		3.37	
Depreciation - Machinery		43.02	
TOTAL OPERATING COSTS	238.14/t	480.75	
PART III - PRODUCTION COSTS			
Operating Costs		480.75	
Int. on Equity - Owned Land		115.97	
Int. on Equity - Improvements		1.95	
Int. on Equity - Machinery		75.75	
Int. on Equity - Supplies			
Interest on Long Term Debt		24.94	
Operator's Labour		18.43	
Family Labour		4.98	
TOTAL PRODUCTION COSTS	358.03/t	722.77	
PART IV - MANAGEMENT FACTORS			
Return Over Operating Costs	66.95/t	135.16	
Return to Management	-52.94/t	-106.87	
Labour Used (Hours)	1.90/t	3.83	
PART V - INVESTMENT ITEMS			
Supply Inventory		55.57	
Power Machinery		244.29	
Other Machinery		175.86	
Buildings and Improvements		24.83	
Land		2035.72	
TOTAL INVESTMENT		2536.27	

Costs and Returns for Potatoes

Nine (9) fresh market potato growers from southern and north central Alberta provided detailed information on costs and returns for the 1981 crop year. Average area per farm for potato production was 182.87 acres with an average yield of 10.58 tonnes per acre. Average total receipts for fresh potatoes were estimated at $1,106.79 per acre or $104.64/tonne for the 1981 crop. Summary of receipts is given in Part I of Table 11.

Average operating costs for potato production for the 1981 crop year was estimated at $869.95 per acre or $82.25 per tonne. Material costs which include fertilizer, chemicals and seed were $201.95 per acre or about 24 per cent of the total operating costs. Another significant cost component was hired labour which amounted to $227.25 per acre and accounted for 27 per cent of the total operating costs. Machinery operating costs including depreciation were $221.64 per acre. Details on other operating cost items are presented in Part II of Table 11

Part III of Table 11 shows 1981 total production costs for potato production. Interest on the equity portion of investment amounted to $213.58 per acre or $20.19 per tonne. Interest paid on long term debt was $56.00 per acre. Operator and family labour was valued at $48.87 per acre. These costs together with the operating costs equalled $1,188.42 per acre or $112.35 per tonne.

Average returns from potatoes produced in 1981 exceeded operating costs by $236.84 per acre or $22.39 per tonne. Return to management (profit) was negative by $81.63 per acre or $7.72 per tonne. Total labour requirements were estimated at 44.66 hours per acre or 4.22 hours per tonne. Details on management factors are given in Part IV of Table 11.

Average investment used to produce one acre of potatoes is shown in Part V of Table 11. Average market value of land under potatoes was $1,345.63 per acre in 1981. Machinery and building improvement amounted to $1,251.97 and $382.81 per acre, respectively. Total investment for the study participants in this group was $3,482.85 per acre.

TABLE 11 COSTS AND RETURNS FOR POTATO PRODUCTION

		GROUP AVERAGE (9 REPORTS)	YOUR FARM
PART I - INCOME			
Acreage Per Farm		182.87	
Yield Per Acre (tonnes)		10.58	
Crop Value		$1106.14	
Crop Insurance Receipts			
Miscellaneous Receipts		$0.65	
TOTAL RECEIPTS $/ACRE	$104.64/t	$1106.79	
PART II - OPERATING COSTS	- - - - - -	DOLLARS PER ACRE	- - - - - -
Fertilizer		73.79	
Chemicals		29.19	
Seed Purchased		98.97	
Home Grown Seed		6.12	
Custom Work Hired		11.04	
Crop and Hail Insurance		0.27	
Cash Rent and Crop Share		27.49	
Power Machinery - Fuel		49.49	
Power Machinery - Repairs		24.91	
General Machinery - Repairs		30.66	
Special Machinery - Repairs		13.67	
Miscellanous Equipment		8.48	
Building Repairs		1.24	
Operating Capital Interest Pd.		60.78	
Utilities		18.52	
Other Insurance		8.96	
Property Taxes		11.51	
Accounting and Legal		3.90	
Other		58.44	
Hired Labour		227.25	
Tools Purchased		3.59	
Depreciation - Improvements		7.24	
Depreciation - Machinery		94.43	
TOTAL OPERATING COSTS	82.25/t	869.95	
PART III - PRODUCTION COSTS			
Operating Costs		869.95	
Int. on Equity - Owned Land		120.28	
Int. on Equity - Improvements		30.41	
Int. on Equity - Machinery		62.89	
Int. on Equity - Supplies			
Interest on Long Term Debt		56.00	
Operator's Labour		38.96	
Family Labour		9.91	
TOTAL PRODUCTION COSTS	112.35/t	1188.42	
PART IV - MANAGEMENT FACTORS			
Return Over Operating Costs	22.39/t	236.84	
Return to Management	-7.72/t	-81.63	
Labour Used (Hours)	4.22/t	44.66	
PART V - INVESTMENT ITEMS			
Supply Inventory		502.44	
Power Machinery		473.75	
Other Machinery		778.22	
Buildings and Improvements		382.81	
Land		1345.63	
TOTAL INVESTMENT		3482.85	

Costs and Returns For Seed Potatoes

Production costs and returns information was obtained from three (3) seed potato growers located in the Lethbridge region for the 1981 crop year. Average yield per acre of seed potatoes was 8.81 tonnes. Total receipts were estimated at $1,514.02 per acre or $171.81 per tonne. Details on receipts are given in Table 12.

Average operating costs for seed potatoes are presented in Part II of Table 12 which was $1,113.50 per acre or $126.36 per tonne. Seed and fertilizer costs for seed potatoes were considerably higher as compared to these costs for fresh potatoes. Material costs (seed, fertilizer and chemicals) amounted to $226.64 per acre or 16 per cent of the total operating costs. Machinery operating costs (fuel, repairs and depreciation) were estimated at $363.05 per acre for production of seed potatoes in 1981. Hired labour charges amounted to $217.13 per acre.

Total production costs for seed potatoes are presented in Part III of Table 12. Interest on the equity portion of investment was estimated at $249.31 per acre while interest paid on long term debt was $20.23 per acre. Operator and family labour was valued at $42.34 per acre. These costs together with the operating costs amounted to $1,425.39 per acre or $161.75 per tonne of saleable seed potatoes produced.

Returns from seed potato production in 1981 were in excess of total production costs thus resulting in a profit or return to management of $88.63 per acre or $10.06 per tonne. Returns over operating costs were $400.51 per acre or $45.45 per tonne. Labour requirements for production of seed potatoes averaged 20.66 hour per acre.

Investment in land, buildings, and machinery Table 12, Part IV were significantly higher for seed potato production compared to other agricultural enterprises analysed in this study. The market value of total investment in seed potatoes was $5,235.10 per acre. Of this total, $1,891.81 (37 per cent) was for machinery, $1,256.74 (24 per cent) was for buildings and improvements, $1,072.03 (21 per cent) was for an acre of land, and $1,014.52 (20 per cent) was supply inventory.

TABLE 12 COSTS AND RETURNS FOR SEED POTATO PRODUCTION

		GROUP AVERAGE (3 REPORTS)	YOUR FARM
PART I - INCOME			
Acreage Per Farm		80.25	
Yield Per Acre (tonnes)		8.81	
Crop Value		$1410.18	
Crop Insurance Receipts		$103.84	
Miscellaneous Receipts			
TOTAL RECEIPTS $/ACRE	$171.81/t	$1514.02	
PART II - OPERATING COSTS	- - - - - - -	DOLLARS PER ACRE	- - - - - - -
Fertilizer		95.22	
Chemicals		30.28	
Seed Purchased		101.14	
Home Grown Seed			
Custom Work Hired		1.91	
Crop and Hail Insurance		21.28	
Cash Rent and Crop Share		12.46	
Power Machinery - Fuel		53.19	
Power Machinery - Repairs		41.30	
General Machinery - Repairs		77.00	
Special Machinery - Repairs		33.23	
Miscellanous Equipment		0.19	
Building Repairs		10.32	
Operating Capital Interest Pd.		110.80	
Utilities		30.71	
Other Insurance		37.13	
Property Taxes		8.02	
Accounting and Legal		7.75	
Other		14.82	
Hired Labour		217.13	
Tools Purchased		3.22	
Depreciation - Improvements		48.07	
Depreciation - Machinery		158.33	
TOTAL OPERATING COSTS	126.36/t	1113.50	
PART III - PRODUCTION COSTS			
Operating Costs		1113.50	
Int. on Equity - Owned Land		91.11	
Int. on Equity - Improvements		84.16	
Int. on Equity - Machinery		74.04	
Int. on Equity - Supplies			
Interest on Long Term Debt		20.23	
Operator's Labour		25.73	
Family Labour		16.61	
TOTAL PRODUCTION COSTS	161.75/t	1425.39	
PART IV - MANAGEMENT FACTORS			
Return Over Operating Costs	45.45/t	400.51	
Return to Management	10.06/t	88.63	
Labour Used (Hours)	2.35/t	20.66	
PART V - INVESTMENT ITEMS			
Supply Inventory		1014.52	
Power Machinery		762.99	
Other Machinery		1128.82	
Buildings and Improvements		1256.74	
Land		1072.03	
TOTAL INVESTMENT		5235.10	

SECTION IV

SUMMARY

A total of nine (9) crops were studied which included major fresh and processing vegetables, and fresh and seed potatoes. Table 13 provides a summary of the 1981 costs and returns data for the various crops. Readers or users of this information are cautioned not to draw any specific conclusions from the data presented in the report because in many cases the number of participants was relatively small and therefore, may lack an accurate and representative assessment of each crop. However, it is suggested that the data presented in this report should be used as guidelines to evaluate the performance of a particular enterprise.

The following major observations can be made from the information contained in Table 13:

1. Cabbage and turnips production are the most labour and machinery intensive crops as these costs amounted to well over $1,000 per acre.
2. Processing vegetables are the least demanding in terms of machinery and labour. The costs for beans, corn and peas ranged from $63 to $100 per acre.
3. All of the crops studied and analyzed in this report showed positive returns over the operating costs.
4. Five of the crops - cabbage, fresh carrots, peas, processing corn and fresh potatoes showed negative returns to management, i.e., total production costs exceeding total receipts. Returns to management or profit ranged from ($27.88) per acre for fresh carrots to ($112.50) for processing corn.
5. Turnips were the most profitable crop in 1981 followed by seed potatoes and fresh corn.
6. Material costs, i.e., fertilizer, chemicals and seed, on a per acre basis were significantly higher for seed potatoes, potatoes and fresh carrots in relation to other crops.

TABLE 13

SUMMARY OF 1981 COSTS AND RETURNS FOR SELECTED VEGETABLE AND POTATOES

	Fresh Vegetables				Processing Vegetables				
	Cabbage	Carrots	Corn	Turnips	Beans	Corn	Peas	Potatoes	Seed Potatoes
Average Acreage	21.5	60	57.5	17.5	24.29	61.92	51.37	182.87	80.25
Yield Per Acre (tonne)	9.07	16.11	4.20	14.21	2.78	5.68	2.02	10.58	8.81
Receipts Per Acre ($) (1)	2283.97	1719.16	757.70	4176.71	796.54	458.29	615.90	1106.79	1514.02
Operating Costs	- $ PER ACRE -								
Material Costs (2)	113.64	194.85	95.87	98.87	130.97	93.67	154.12	208.07	226.64
Machine Operating (3)	225.69	172.57	191.43	316.63	80.85	52.47	69.23	127.21	204.91
Hired Labour	556.59	187.46	78.09	548.26	18.75	10.98	7.35	227.25	217.13
Miscellaneous (4)	677.43	514.55	217.17	715.46	251.75	135.02	203.66	205.75	258.42
Depreciation	185.07	295.71	61.47	274.14	63.92	37.03	46.39	101.67	206.40
TOTAL OPERATING COSTS	1758.42	1365.14	607.64	1953.36	546.24	329.17	480.75	869.95	1113.50
Interest on Equity	157.67	126.32	52.33	328.72	163.53	159.18	193.67	213.58	249.31
Interest Paid on Debt	23.26	171.86	22.61	4.29	39.93	40.35	24.94	56.00	20.23
Operator's & Family Labour	383.32	83.72	56.48	-864.22	-42.44	42.09	23.41	48.87	42.34
TOTAL PRODUCTION COSTS	2322.67	1747.03	739.06	3150.58	791.13	570.79	722.77	1188.42	1425.39
Return Over Operating Costs	525.55	354.02	150.06	2223.36	250.30	129.11	135.11	236.84	400.51
Return To Management	(38.70)	(27.88)	18.63	1026.13	5.40	(112.50)	(106.87)	(81.63)	88.63
Investment Per Acre	3298.57	5278.71	2022.59	4444.18	2316.98	2296.70	2536.27	3482.85	5235.10
Labour Hours Per Acre	-216.85	29.21	21.10	296.34	8.32	4.69	3.83	44.66	20.66
Break-Even Yield To Cover All Costs	9.23	16.37	4.09	10.72	2.76	7.07	2.37	11.36	8.29

(1) Include estimated value of crop, insurance receipts and stabilization payments.

(2) Include costs for fertilizers, chemicals and seed.

(3) Include fuel and machinery repairs.

(4) Includes items like charges for custom work, crop insurance fees, building repairs, utilities, taxes, freight charge and association dues (included under other).